described in the specification of this application, an exchangeable jacket 103 is disposed inside the side wall 102 of the chamber as clearly illustrated in Fig. 1 of the drawings of this application, for example, which exchangeable jacket is detachable from the processing chamber and is removable to outside of the processing chamber. In light of the points raised by the Examiner, the terminology utilized in the claims has been amended to recite, for example, in claim 21, a detachable member which is detachably held inside of the side wall of the etching chamber so that the detachable member forms a wall surface of the etching chamber and which is removable from the side wall to outside of the etching chamber. In accordance with the present invention, as also now recited in claim 21, a thermally conductive medium circulates through the interior of the detachable member 103 as illustrated in Fig. 1 and a temperature controller controls a temperature of a surface of the detachable member which phases the plasma in the etching chamber with a predetermined range, and enables depositing of a coating layer on the surface of the detachable member during etching, which prevents the surface of the detachable member from being etched by the plasma. Additionally, as clearly described in the specification, through the use of the detachable member, the side wall of the processing chamber represented by the side wall 102 enjoys a long lifetime. Applicants note that claim 27 has been amended to incorporate the features of claim 26 therein, and recites similar features, and further, newly added independent claims 32, 38 and 45 have been presented, wherein claim 32 recites the feature of a detachable member forming an inner surface of the wall of the processing chamber, and a thermally conductive medium circulates inside of the detachable member forming the inner wall surface of the processing chamber, wherein the temperature of the detachable member is controlled within a predetermined range by the circulation of the thermally conductive medium therein. It is noted that the dependent claims recite further features of the present invention and claims 38 and

45 are directed to a plasma etching method, since the Examiner has indicated that method limitations are viewed as intended use and are not given consideration. Applicants submit that all claims as now present in this application should be considered to be in compliance with 35 U.S.C. §112, second paragraph.

As to the rejection of claim 26 under 35 U.S.C. 102(b) as being anticipated by Shinichiro, JP 63-005526A and the rejection of claim 26 under 35 U.S.C. 102(b) as being anticipated by Shinji, JP 09-275092, such rejections are considered to be obviated by the cancellation of claim 26 and it is considered unnecessary to discuss this cited art in relation to the remaining claims, in that the Examiner has not utilized such references in rejecting the other claims of this application.

As to the rejection of claims 21-25 and 27-31 under 35 U.S.C. 103(a) as being unpatentable over Goto et al, U.S. Patent 5,843,277 in view of Hanaguri, JP 1-208499 and the rejection of claims 21-31 under 35 U.S.C. 103(a) as being unpatentable over Hanaguri, JP 1-208499A in view of Goto et al, U.S. Patent 5,843,277, such rejections are traversed insofar as they are applicable to the present claims, and reconsideration and withdrawal of the rejections are respectfully requested.

As to the requirements to support a rejection under 35 U.S.C. 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under §103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use

hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the recent decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be remedied with conclusions about what is "basic knowledge" or "common knowledge". The court pointed out:

> The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

Applicants note that the present invention is directed to a plasma etching apparatus and a method for etching of a sample placed inside of a processing chamber by generating a plasma in the processing chamber, wherein a detachable member forming an inner wall surface of the processing chamber is utilized and a thermally conductive medium circulates through the inside of the detachable member forming the wall surface of the processing chamber in which the detachable member is controlled within a predetermined temperature range by circulation of the thermally conductive medium. In this manner, the temperature on the inner surface of the processing chamber, it is more accurately controlled and as a result, the state of

change on the surface thereof which is exposed to the plasma during etching of the sample is optimized, such as deposition of reaction products or the scraping of the container wall surface, which gives an undesired effect on the etching process, thereby decreasing the change of etching characteristics with laps of time for a long period of time. As such, with the present invention, the reliability and reproducibility of the etching process is continued.

Turning to Goto et al, the Examiner refers to col. 8, lines 20-42 of this patent, which describes that the walls of the chamber 105, as illustrated in Fig. 1of the drawings of this patent, for example, are provided with temperature control means which may be in the form of heat exchange water jackets buried in the chamber walls between their inner and outer surfaces. Although the Examiner contends that "Goto et al does not expressly disclose that the jacket is removable from the side wall of the etching chamber", the fact remains that Goto et al provides no disclosure of a detachable member being held inside of a side wall of an etching chamber and forming a wall surface of the etching chamber. That is, Goto et al specifically discloses that heat exchange water jackets are buried in the chamber walls. Thus, Goto et al provides no disclosure or teaching of a detachable member, which itself, forms a wall surface of the etching chamber and is removable from the side wall of the etching chamber to outside of the etching chamber as recited in claim 21, for example. Applicants submit that the other independent and dependent claims recite similar features and such features are not disclosed or taught by Goto et al in the sense of 35 U.S.C. 103, such that all claims should be considered allowable thereover.

Recognizing the deficiency of Goto et al, the Examiner refers Hanaguri and states "With respect to the jacket being removable from the side wall of the etching chamber, Hanaguri discloses a jacket 5 which is held inside of side wall 2 so as to form a wall surface of the etching chamber and is removable from the etching

chamber..." (emphasis added). Contrary to the position set forth by the Examiner, applicants submit that Hanaguri is directed to a film formation device and does not disclose an etching chamber wherein plasma etching of a sample is effected. Moreover, in Hanaguri, what the Examiner refers to as a jacket 5 is described as an inner chamber which is an operative chamber of the vacuum film formation device and is disposed within an outer chamber and which is provided with a cooling mechanism in the form of a cooling tube which surrounds the box-shaped outer circumferential plane of the inner chamber. It is noted that arc discharge or the like is provided within the inner chamber, such that the inner chamber is used as a shield chamber for shielding the wall of the outer chamber and wheels are provided for taking out the inner chamber at a space from the outer chamber. Moreover, in Hanaguri, there is no disclosure of a detachable member which is detachably held inside of the side wall of an etching chamber and forms a wall surface of the etching chamber and which is removable from the side wall to outside of the etching chamber. Moreover, there is no disclosure or teaching in Hanaguri that a thermally conductive medium is circulated through the interior of the detachable member which is held inside of the side wall during etching. Additionally, there is no disclosure or teaching of depositing a coating layer on the surface of the detachable member during etching, which prevents the surface of the detachable member being etched by the plasma. Applicants submit that the proposed combination of Goto et al and Hanaguri represents a hindsight reconstruction attempt utilizing the principle of "obvious to try" which is not the standard of 35 U.S.C. 103, and that the features as recited in the independent and dependent claims of this application are not disclosed or taught by this combination. See In re Fine, supra.

As to the other combination of the cited art, wherein Hanaguri is utilized as a principle reference and is modified by Goto et al, applicants submit that the same arguments, as presented above, are applicable thereto. That is, Hanaguri cannot be

properly combined with Goto et al other than by a hindsight reconstruction attempt which does not result in the claimed features. Moreover, as to the Examiner's indication that method limitations are viewed as intended uses that do not further limit and therefore do not patentably distinguish the claimed invention and such limitation is considered to involve routine experimentation which has been held to be in the level of the ordinary skill in the art, reference is made to the decision of In re Lee, supra, which points out that this position by the Examiner is not proper. Thus, applicants submit that all claims present in this application also patentably distinguish over the proposed combination of Hanaguri and Goto et al for the reasons given above.

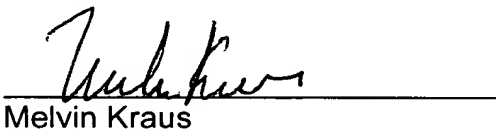
Applicants note that independent claims 21, 27 and the dependent claims of this application patentably distinguish over the cited art for the reasons given above. Similarly presented independent claims 32, 38 and 45 directed to both the apparatus and method of the present invention recite the aforementioned features which are not disclosed or taught in the cited art, such that applicants submit that these claims also patentably distinguish over the cited art and should be considered allowable thereover.

In view of the above amendments and remarks, applicants submit that all claims present in this application patentably distinguish over the cited art and should now be in condition for allowance. Accordingly, issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, applicant's petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing

of this paper, including extension of time fees, to Deposit Account No. 01-2135 (520.34403CV4) and please credit any excess fees to such deposit account.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Page 21, please amend the paragraph beginning at line 6 as follows:

The plasma etching apparatus in this embodiment is structured as mentioned above and each unit in the reactor, particular the inner surface of the side wall ~~103~~ 102 and the ring 116, and temperature control of the sample holder ring 132 and deposition control of reaction products will be explained in detail hereunder.

IN THE CLAIMS:

Please amend claims 21-24 as follows:

21. (twice amended) A plasma etching apparatus for etching of a sample comprising:

an etching chamber having a side wall and a ~~replaceable jacket~~ detachable member which is detachably held inside of said side wall so ~~as to form~~ that said detachable member forms a wall surface of said etching chamber and which is removable from ~~the~~ said side wall to outside of said etching chamber, the sample being disposed in said etching chamber;

an evacuation system which evacuates said etching chamber by an evacuation system;

an etching gas supply which supplies an etching gas into said etching chamber;

a plasma generator which generates a plasma for performing etching of said sample in said etching chamber; and

a temperature controller which circulates a ~~heat exchanging~~ thermally conductive medium through the interior of said ~~replaceable jacket~~ detachable member held inside of said side wall during etching so as to at least control a temperature of a surface of said ~~replaceable jacket~~ detachable member which faces the plasma in said etching chamber within a predetermined range and enables

depositing of a coating layer on the surface of said ~~replaceable jacket~~ detachable member during etching which prevents the surface of said ~~replaceable jacket~~ detachable member from being etched by said plasma.

22. (twice amended) A plasma etching apparatus according to claim 21, wherein said temperature controller circulates said ~~heat exchanging~~ thermally conductive medium so as to control the temperature of the surface of said ~~replaceable jacket~~ detachable member in a range of 0 to 50°C.

23. (twice amended) A plasma etching apparatus according to claim 21, wherein the coating layer is deposited with a thickness which is sufficient to prevent the surface of said ~~replaceable jacket~~ detachable member from being etched during etching of the sample by said plasma and which does not peel off during etching of the sample.

24. (twice amended) A plasma etching apparatus according to claim 23, wherein the thickness of the coating layer is about ~~2000~~ 200 microns.

Please cancel claim 26 without prejudice or disclaimer of the subject matter thereof.

Please rewrite claim 27 in independent form as follows:

27. (twice amended) A plasma etching apparatus ~~according to claim 26,~~ for etching a sample comprising:

an etching chamber having a side wall;

a detachable member for protecting the side wall of the etching chamber and which is removable from the side wall of the etching chamber to outside of the etching chamber;

a sample holder which holds a sample to be etched within the etching chamber;

means for generating a plasma and for etching the sample within the etching chamber; and

means for preventing etching of a surface of the detachable jacket which is detachable held inside of the side wall of the etching chamber so as to form a wall surface of the etching chamber and faces the plasma during etching of the sample by depositing a coating film on the surface of the detachable member facing the plasma during etching of the sample;

wherein the means for preventing etching of the surface of the ~~replaceable jacket~~ detachable member includes a temperature controller which circulates a ~~heat exchanging member~~ thermally conductive medium through the interior of ~~said replaceable jacket~~ the detachable member during etching of the sample so as to at least control a temperature of the surface of ~~said replaceable jacket~~ the detachable member which faces the plasma in said etching chamber within a predetermined range.

Please amend claims 28, 29 and 31 as follows:

28. (twice amended) A plasma etching apparatus according to claim 27, wherein ~~said~~ the temperature controller circulates ~~said heat exchanging~~ thermally conductive medium so as to control the temperature of the surface of ~~said replaceable jacket~~ the detachable member in a range of 0 to 50°C.

29. (twice amended) A plasma etching apparatus according to claim 27, wherein the coating layer is deposited with a thickness which is sufficient to prevent the surface of ~~said replaceable jacket~~ the detachable member from being etched during etching of the sample by ~~said~~ the plasma and which does not peel off during etching of the sample.

31. (amended) A plasma etching apparatus according to claim 27, wherein the ~~heat exchanging~~ thermally conductive medium is a refrigerant.

Please add the following new claims:

--32. A plasma etching apparatus for etching of a sample placed inside a processing chamber by generating a plasma in the processing chamber comprising:

a detachable member forming an inner surface of a wall of the processing chamber, and a thermally conductive medium circulates inside of the detachable member forming the inner wall surface of the processing chamber, wherein the temperature of the detachable member is controlled within a predetermined range by the circulation of the thermally conductive medium therein.

33. A plasma etching apparatus according to claim 32, wherein the thermally conductive medium is supplied to the detachable member and the inner wall surface of the processing chamber is cooled thereby.

34. A plasma etching apparatus according to claim 32, wherein a coating layer is formed on the inner wall surface of the processing chamber during etching.

35. A plasma etching apparatus according to claim 32, wherein the thermally conductive medium is a coolant.

36. A plasma etching apparatus according to claim 32, wherein the temperature is controlled in a range of 0 to 50°C.

37. A plasma etching apparatus according to claim 34, wherein the maximum thickness of the coating layer is 200 microns.

38. A plasma etching method of etching a sample placed inside of a processing chamber by generating a plasma, wherein the sample is etched by controlling a temperature of a detachable member forming an inner wall surface of the processing chamber and which faces the plasma during etching.

39. A plasma etching method as defined in claim 38, wherein a thermally conductive medium is supplied to the detachable member and the inner wall surface of the processing chamber is cooled.

40. A plasma etching method as defined in claim 38, wherein a thermally conductive medium circulates through the inside of the detachable member forming the inner wall surface of the processing chamber.

41. A plasma etching method as defined in claim 38, wherein a coating layer is formed on the inner wall surface of the processing chamber during etching.

42. A plasma etching method as defined in claim 41, wherein the maximum thickness of the coating layer is controlled to be 200 microns.

43. A plasma etching method as defined in claim 38, wherein the thermally conductive medium is a coolant.

44. A plasma etching method as defined in claim 38, wherein the temperature is controlled in a range of 0 to 50°C.

45. A plasma etching method comprising the steps of reducing a pressure inside of a processing chamber, placing a sample on a specimen bed located inside the processing chamber and generating a plasma in the processing chamber, thereby plasma etching processing the sample placed on the specimen bed, and

controlling a temperature of a detachable member forming an inner wall surface of the processing chamber and which faces the plasma during etching to a predetermined temperature range.

46. A plasma etching method as defined in claim 45, wherein a thermally conductive medium is supplied to the detachable member and the inner wall surface of the processing chamber is cooled.

47. A plasma etching method as defined in claim 45, wherein a thermally conductive medium circulates through the inside of the detachable member forming the inner wall surface of the processing chamber.

48. A plasma etching method as defined in claim 45, wherein a coating layer is formed on the inner wall surface of the processing chamber during etching.

49. A plasma etching method as defined in claim 48, wherein the maximum thickness of the coating layer is controlled 200 microns.

50. A plasma etching method as defined in claim 45, wherein the thermally conductive medium is a coolant.

51. A plasma etching method as defined in claim 45, wherein the temperature is controlled in a range of 0 to 50°C.--